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The TOMATO FRUITWORM

how to control it

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The TOMATO FRUITWORM

The tomato fruitworm eats deep holes in tomato fruits. It occurs all over the United States and does more damage to tomatoes than any other insect. An individual fruitworm commonly devours or ruins four or five fruits.

Tomato growers in the southern part of the country lose millions of dollars each year because of tomato fruitworm damage. In seasons favorable to the insect's development—about every third year—losses are equally heavy in northern areas. By applying insecticides and using other control measures, growers can cut these losses 90 percent or more.

The scientific name of the tomato fruitworm is *Heliothis zea*. When this insect occurs on corn it is called the corn earworm; and on cotton, the bollworm.

DEVELOPMENT

The adult of the tomato fruitworm is a moth. The other life stages are egg, larva, and pupa.

The female moths lay their eggs singly on the

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When they become about ½ inch long, the larvae begin feeding on the fruit. Full-grown larvae are about 1¼ inches long. They may be green, brown, or pink. The heads are orange.

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The pupae, to which the larvae transform after burrowing into the soil, look like brown capsules. They are about ¾ inch long. Below: Pupa in its cell at the bottom of a burrow.

tomato plants—usually on the leaves. In 4 to 6 days the eggs hatch into larvae (fruitworms), which immediately begin to feed on the foliage. In a day or two the fruitworms begin to move down the stems and eat into the fruits.

The fruitworms become full grown in about 20 days. Each drops or crawls to the ground, burrows 1 to 3 inches, and transforms to a pupa, which develops into a moth. The pupal stage lasts at least 2 weeks. Some individuals may remain in this stage until spring.

The moths emerge from the ground and start a new life cycle: They mate, and the females lay eggs.

There are more generations of fruitworms, and more severe infestations, in southern than in northern areas. Four or five generations are produced each year in southern areas.

CONTROL

The insecticide carbaryl, applied as a spray, is effective against the tomato fruitworm on tomatoes.

Timing of the first application is important. It should be made when the first fruits of the main crop are setting. At this time the fruits are ½ inch or less in diameter, and there are about five on each plant. Check on the fruit set, not the size of the plants, which may vary from 1 to 4 feet in diameter when the fruits are setting. Make three applications at 2-week intervals.

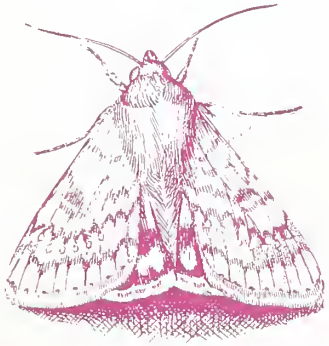
Apply the spray when there is little or no wind. Get it all over the foliage. The fruitworms must be killed while on the foliage—before they get to the fruit.

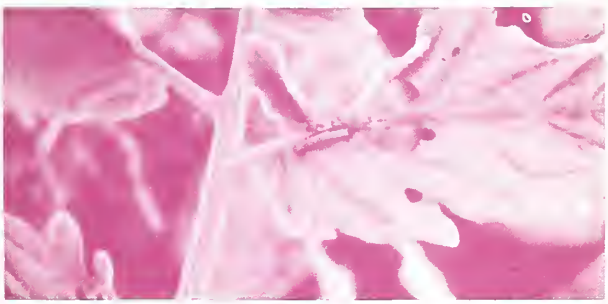
CULTURAL METHODS

Applying insecticides is the chief means of controlling the tomato fruitworm, but there are other things you can do: Disk or plow tomato fields and cornfields immediately after harvest to kill many of the pupae in the soil. . . . Kill each fruitworm that you find while picking tomatoes.

If Other Pests Occur With the Tomato Fruitworm . . .

Tomato fruitworm infestations are sometimes accompanied by infestations of other pests.





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The adult of the tomato fruitworm is a buff-colored moth about 1 inch long (above). Females lay white, spherical eggs smaller than a pinhead. The young larvae feed on tomato leaves until they are about ½ inch long (below). Newly hatched larvae are whitish and less than ⅛ inch long. They soon become brown.

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Make first application of insecticide when fruits have appearance shown here.

Ordinary infestations of hornworms, the Colorado potato beetle, and climbing cutworms can be controlled by the sprays recommended for the tomato fruitworm.

A severe infestation of leaf miners[1] may require the application of diazinon or dimethoate.

PRECAUTIONS

Pesticides used improperly can be injurious to man, animals, and plants. Follow the directions and heed all precautions on the labels.

Store pesticides in original containers under lock and key—out of the reach of children and animals—and away from food and feed.

Apply pesticides so that they do not endanger humans, livestock, crops, beneficial insects, fish, and wildlife. Do not apply pesticides when there is danger of drift, when honey bees or other pollinating insects are visiting plants, or in ways that may contaminate water or leave illegal residues.

Avoid prolonged inhalation of pesticide sprays or dusts; wear protective clothing and equipment if specified on the container.

[1] *Liriomyza sp.*

If your hands become contaminated with a pesticide, do not eat or drink until you have washed. In case a pesticide is swallowed or gets in the eyes, follow the first-aid treatment given on the label, and get prompt medical attention. If a pesticide is spilled on your skin or clothing, remove clothing immediately and wash skin thoroughly.

Do not clean spray equipment or dump excess spray material near ponds, streams, or wells. Because it is difficult to remove all traces of herbicides from equipment, do not use the same equipment for insecticides or fungicides that you use for herbicides.

Dispose of empty pesticide containers promptly. Have them buried at a sanitary land-fill dump or crush and bury them in a level, isolated place.

NOTE: Some States have restrictions on the use of pesticides. Check your State and local regulations.

Prepared by Entomology Research Division
Agricultural Research Service

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